

TANNOY®

110 SERIES SUBWOOFERS

OWNER/OPERATOR/INSTALLER MANUAL

110TB (Tile Bridge)



110SR (Sheet Rock)



110CS (Corner Sub)



WARRANTY/DAMAGE CLAIMS

Congratulations on the purchase of your Tannoy 110 Series Subwoofer.

No regular maintenance of the subwoofer is necessary.

All Tannoy professional loudspeaker products are covered by a 5 year warranty for loudspeaker components and one year for electronic components from the date of purchase subject to the absence of misuse, overload, or accidental damage.

Claims will not be considered if the serial number has been altered or removed.

Work under warranty should only be carried out by a Tannoy Professional dealer or service agent. This warranty in no way affects your statutory rights.

For further information please contact your service dealer or distributor in your area. If you cannot locate a distributor, please contact Customer Services, Tannoy/TGI North America Inc. at the address given below.

DO NOT SHIP ANY PRODUCT TO TANNOY WITHOUT PRIOR AUTHORIZATION

Our policy commits us to incorporating improvements to our products through continuous research and development. Please confirm current specifications for critical applications with your supplier.

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For further information on our warranty policies please refer to our website.

Our customer service department is available during normal office hours (EST) for questions regarding service, purchase, installation or any other technical matters.

Installation of Tannoy products should be performed by an experienced contractor familiar with local codes. Failure to properly install and secure heavy Tannoy equipment may cause a device to fall. Tannoy cannot be responsible for damage or injury due to improperly installed equipment.

UNPACKING-DAMAGE CLAIMS

Each Tannoy product is inspected for damage and inventoried to ensure that all accessories and packing materials are included before sealing and shipping. Please keep all packaging for the duration of the warranty period.

When unpacking equipment, take note of any damages to the cardboard container and carefully inspect your Tannoy equipment for any impact in that area. Should you have any damage, immediately notify your carrier and our Tannoy customer service department. A return claim may be issued. You may be required to repack the equipment for pick-up by your local carrier.

Some Tannoy products will include additional parts, accessories, cables etc. and you are advised to inventory these against the following packing lists for your particular product. If you note any shortages, contact your local dealer.

110 SERIES SUBWOOFERS AND INPUT MODULES



110TB (Tile Bridge)



110SR (Sheet Rock)



110CS (Corner Sub)

This manual is intended for the owner, operator, or installer of Tannoy 110 series subwoofers. It is a guide for installing, setting up and operating the 110 series in accordance with established codes and practices available at the time of publication. It does not and cannot detail all possible mounting or wiring configurations. The end user is advised to retain the advice and services of a qualified contractor who is familiar with local codes and trained in the installation of Tannoy professional audio systems.

The 110 family of subwoofers has been engineered to deliver low frequency extension and impact from either a concealed ceiling mounted position or an unobtrusive corner position, at any height from floor to ceiling.

The 110 Series subwoofers feature a 10" long excursion driver capable of low end response down to 31 Hz and power handling in excess of 100 Watts. Its design is fully complementary to any Tannoy full range wall or ceiling mount loudspeaker.

Three different subwoofer cabinet designs and six different input "modules" offer a wide range of combinations that can meet almost any installation challenge, and fit into any indoor environment.

Today's sound reinforcement systems—whether in commercial or institutional environments—must handle program material that demands high impact, high-fidelity audio reproduction. At the same time, they must be nearly invisible. The Tannoy 110 Series of subwoofers meet all of these criteria without compromise.

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CABINET OPTIONS

110TB (Tile Bridge) Cabinet



Simple yet sophisticated, the 110TB is the first product of its kind: a true ceiling mounted subwoofer. Engineered to deliver low frequency extension (-3 dB @ 31 Hz) and impact from a concealed ceiling mounted position, the 110TB integrates almost invisibly into any indoor environment by using a standard air handling vent cover as a speaker grille. The easy to install 110TB drops seamlessly into a 2' x 2' ceiling tile without any special construction requirements. Each corner of the cabinet is fitted with a seismic tether point. This system can also be flown in free space via 3/8" threaded rod, chain or aircraft cable. Fire rating is NFPA class A. Whether your application calls for low level warmth or high SPL slam, the 110TB provides the required punch.

110SR (Sheet Rock) Cabinet



The second in the Tannoy family of true ceiling mounted subwoofers, the 110SR is engineered to deliver low frequency extension (-3 dB @ 31 Hz) and impact from a concealed position. It is specifically designed for flush mount in sheet rock ceilings, walls, overhangs or any position offering adequate clearance and suitable structural support. The 110SR features seismic tether points, and safe and secure installation with a sturdy pre-installation ring. The pre-installation ring is available separately for new construction where the sheet rock installers are in ahead of the contractor. A unique benefit of the 110SR is that it remains serviceable, and fully removeable, from the ground after installation by simply removing the low profile grille. Fire rating is NFPA class A.

110CS (Corner Subwoofer) Cabinet

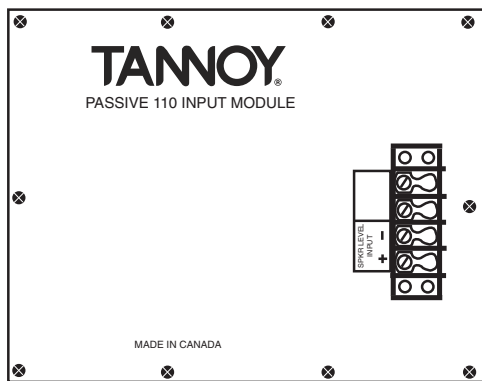


The corner mounted subwoofer, a flexible cousin of the 110TB and 110SR, is engineered to deliver maximum low frequency extension (-3 dB @ 31 Hz) and impact from a corner position. The 110CS may be positioned directly on the floor, or at any point up to the ceiling by means of the sturdy mounting rails. Corner positioning offers a significant advantage in terms of gain over other conventional, free-standing subs. Corner placement turns the floor and walls into direct radiating surfaces that can result in several decibels of additional gain. In addition, paintable finish and convenient placement options contribute to the decorative appeal of the 110CS. Like the 110TB and 110SR, the 110 Corner Subwoofer is positioned to deliver the most from your music system.

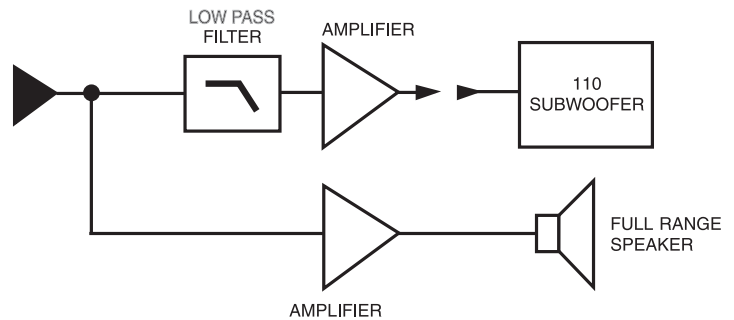
INPUT MODULE OPTIONS

Passive (standard)

The basic connection panel supplied with any of the 110 Series subwoofers is an 8 Ohm speaker level input via barrier strip. It is highly recommended that the audio signal be low pass filtered via an outboard active crossover. This input module is ideal for systems requiring several subs that share a common outboard crossover and amplifier.

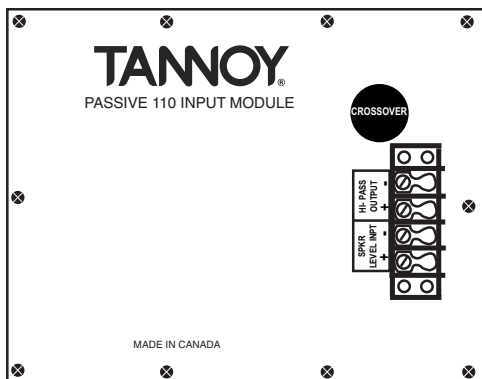


PASSIVE 110 INPUT MODULE—NO CROSSOVER
(MONO INSTALLATION OR SINGLE CHANNEL SHOWN)

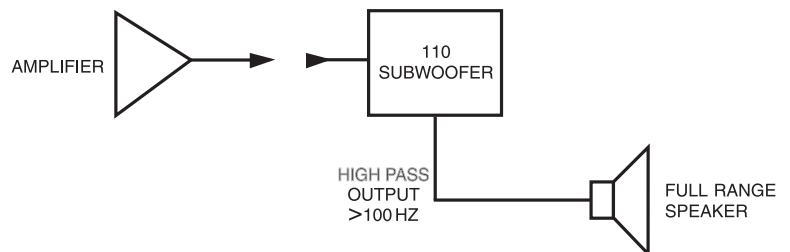


Crossover

Speaker level input and outputs via barrier strip are passively filtered (100 Hz 12 dB/octave low pass for the subwoofer and 100 Hz 12 dB/octave high pass for the satellite) making this the ideal system for value and simplicity. The total impedance load of the satellite speaker(s) should be limited to 3 Ohms or greater. Long wire runs to and from this module need to use an appropriate gauge of speaker grade wire to retain proper damping and signal transfer characteristics.



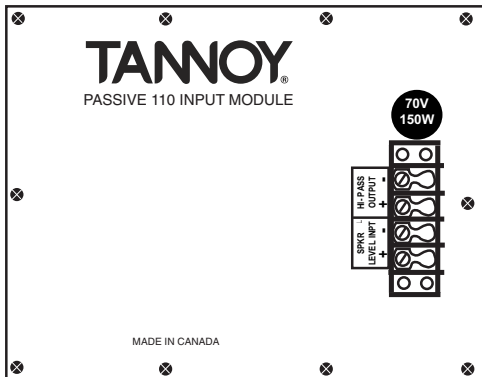
PASSIVE 110 INPUT MODULE—WITH CROSSOVER
(MONO INSTALLATION OR SINGLE CHANNEL SHOWN)



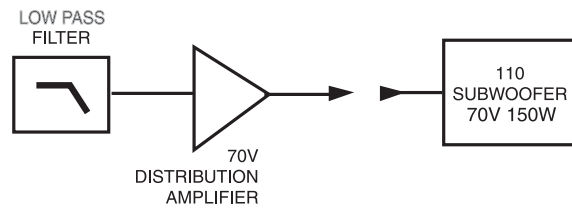
INPUT MODULE OPTIONS

Passive 70 Volt Available for either option on passive units from page 7

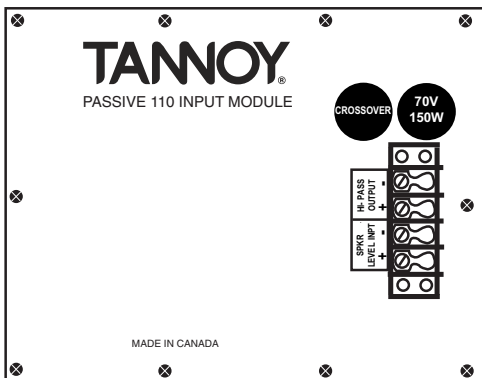
A 70 Volt distribution amplifier is capable of supplying power to a number of remote speakers without concern of long cable runs or varied impedance loads (limited to amplifier power and line load). The passive 70 Volt module takes advantage of this type of installation with a 150 Watt interface transformer, definitely placing this 70 Volt unit above the "wimpy" crowd.



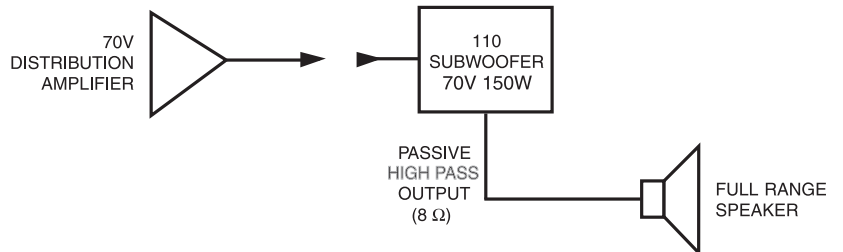
70V PASSIVE INPUT MODULE—NO CROSSOVER



Passive 70 Volt with crossover



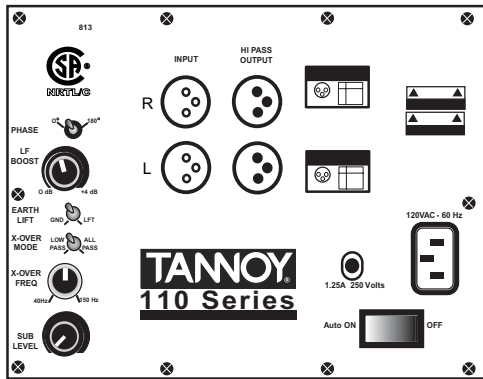
70V PASSIVE INPUT MODULE—WITH CROSSOVER



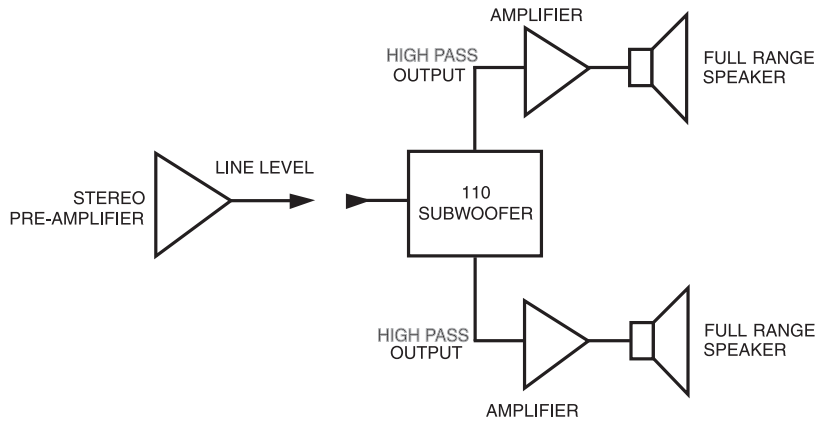
INPUT MODULE OPTIONS

Active (active subwoofer with 2-channel feed-through)

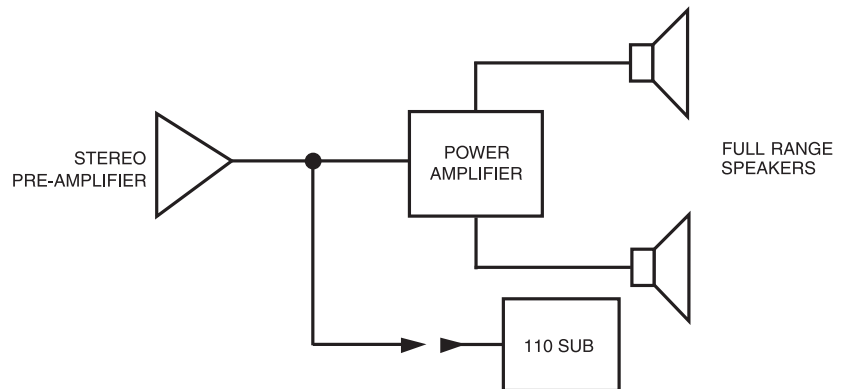
A dedicated power amplifier that really brings your 110 Series subwoofer to life. Balanced line level inputs with switchable, balanced 80 Hz high pass feed-throughs provide appropriate signals to your satellite speaker's amplifier. An auto stand-by feature automatically switches power on and off in response to an audio signal. A full complement of signal conditioning controls rounds out this very versatile controller (See "Active Module Controls" for complete information.) The Active input module is UL and CSA listed.



ACTIVE 110 INPUT MODULE W/OUTPUTS FOR 2 SPEAKERS
NEW STEREO INSTALLATION

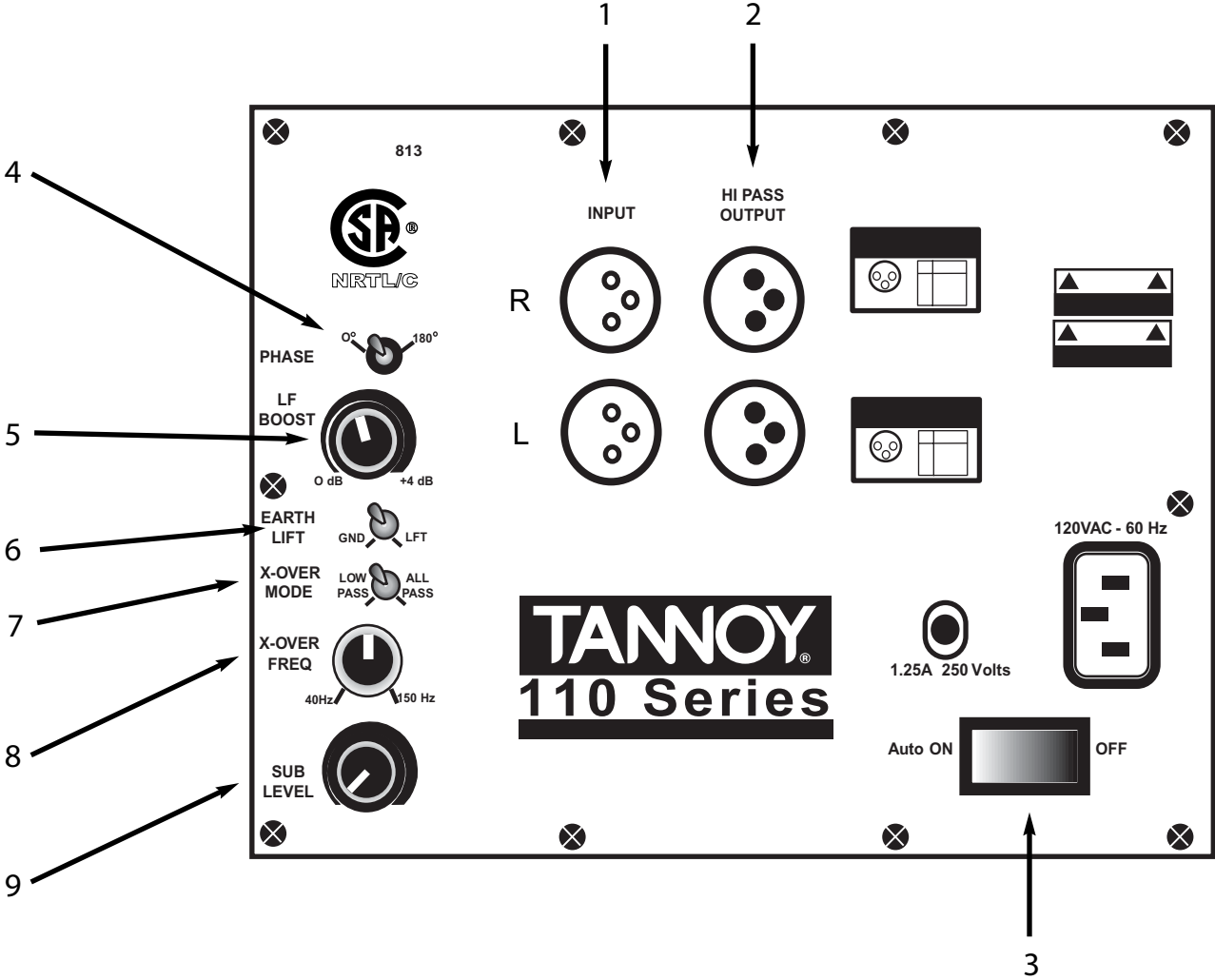


ADDING ACTIVE SUBWOOFER TO AN EXISTING SYSTEM



ACTIVE 110 INPUT MODULE CONTROLS

Active Module with output for 2 speakers



ACTIVE 110 INPUT MODULE CONTROLS

- 1) **INPUT-** Two channel (stereo) balanced line level input. Connect via XLR male plugs from your signal source. Use high quality 2 conductor shielded audio cable (Belden 8451) for runs of up to 200'. The XLR pinout is: pin 1 (Shield), pin 2 (Signal high), pin 3 (Signal low).
- 2) **HIGH PASS OUTPUT-** Two channel line level balanced output (male XLR) filtered of frequencies below 80 Hz (12 db/octave). Connects to your amplifier for driving full range satellite speakers. Use high quality 2-conductor shielded audio cable (Belden 8451). The XLR pin-out is: pin 1 (Shield), pin 2 (Signal high), pin 3 (Signal low).
- 3) **POWER MODE-** Select AUTO-ON for automatic power-up in the presence of an audio signal. In this mode, the unit will revert to stand-by after an audio silence of 15 minutes. Switch to OFF to remove power from the unit. Power OFF will also disable the signal at the HIGH PASS OUTPUT.

THE FOLLOWING CONTROLS ARE FOR THE SUBWOOFER ONLY AND DO NOT AFFECT THE SIGNAL TO YOUR SATELLITE SPEAKERS

- 4) **PHASE-** Subwoofer phase may be switched to 0 or 180 degrees to match the phase of your full range drivers. The switch is in the correct position when the system exhibits an increase in LF output when switched at a sustained level. NOTE: Be sure all full range loudspeakers are wired in common phase during installation.
- 5) **LF BOOST-** Adjusts up to a 4 dB boost at frequencies below 60 Hz for a more dramatic low end performance.
- 6) **EARTH LIFT-** Switches the internal ground connection from chassis to "floating" to help eliminate any possible ground-loops that may cause hum or buzzing in the subwoofer or other pieces of gear.
- 7) **X-OVER MODE-** The LOW PASS position is used in most installations. ALL PASS presents a full range signal to the subwoofer. The ALL PASS mode allows the user to defeat the built-in LOW PASS circuit, which may be useful in certain situations where an external crossover or processor is used.
- 8) **X-OVER FREQ-** Used to adjust the LOW PASS frequency of the subwoofer. This control only adjusts the signal going to the subwoofer as the HIGH PASS crossover frequency is fixed at 80 Hz. (Satellite speakers with limited low end response may require a higher crossover frequency for the subwoofer). This control is best adjusted by ear using a high quality music signal.
- 9) **SUB LEVEL-** Used to adjust the gain of the subwoofer amplifier without affecting the HIGH PASS output.

OPTIONAL J-BOX- If you prefer to hard wire your installation directly into conduit via a J-Box, please specify with order. Only available in 110SR and 110TB cabinet options.

MECHANICAL INSTALLATION 110TB

NEW / EXISTING CONSTRUCTION INSTALLATION PROCEDURES:

Before You Begin:

Please read and understand all of these instructions thoroughly before beginning any work.

Note that construction work for the installation of all Tannoy products must be done to local building codes by qualified, licensed installers. A local building inspector should approve any overhead installations. Tannoy assumes no liability for cause and effect of improper installation work.

Your Package Includes:

The 110TB ceiling sub is complete with rubber isolation grid around the grille perimeter to drop neatly into a properly secured, 2' x 2' ceiling grid without vibration or resonance.

Additional Considerations:

Survey your site and choose an installation location.

At this point, you may choose to suspend the subwoofer in free space or in a 2' space x 2' space dropped ceiling grid installation.

Parts/ Tools Required: (Installation Dependant)

- Hanger bolts (Fig. 1). These can be purchased for installation into wood, or into metal, for example, with a Hilti™ power fastening system.
- Coupling nuts, and Backing nuts (Figs. 2 & 3).
- Threaded rod (Fig. 4).
- Turnbuckles (Fig. 5).
- Wire rope, wire rope nuts, thimbles, chain, quick-links (Figs. 5 & 6).
- Wire grid ties (Fig. 8).

Note: For 2' space x 2' space tile bridge drop in, you will require wire grid support ties on each of the four corners of the grid immediately beside the subwoofer. This is usually accomplished by means of the same wire support tie used to support the grid and for lighting fixtures, etc. IT IS IMPORTANT TO ALWAYS TETHER THE SUBWOOFER SECURELY TO THE BUILDING'S PERMANENT STRUCTURE USING CHAIN (Fig. 9) OR WIRE ROPE. THIS IS THE SEISMIC TETHER POINT.

The list above is a suggested selection of parts only; what you require will depend on your suspension method and physical location.

The 110TB is supplied with four 3/8" closed eyebolts already attached. When suspending in free space, it is recommended that you use the same size hangers, nuts, rod, and fittings; alternately, if you are using wire rope, 1/8" rope and fittings are the smallest you should consider.

MECHANICAL INSTALLATION 110TB



Figure 1: Hanger Bolt



Figure 2: Coupling Nut



Figure 3: Backing Nut



Figure 4: Threaded Rod Assembly



Figure 5: Turnbuckle



Figure 6: Wire Rope Nut & Thimble

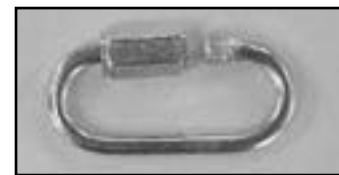


Figure 7: Quick-link

2' x 2' Tile Grid Installation Procedures:

- 1) The 110TB was designed for quick and simple installation directly into a 2' x 2' T-bar ceiling grid (Figs. 9 & 10).
- 2) Remove several tiles around the installation location to gain easier access for lacing the subwoofer in the ceiling grid.
- 3) Be certain that there is sufficient hanger wire suspending the grid where you intended to install the subwoofer. If not, it may be necessary to add additional grid hanger wires around the perimeter of the location, as required. We recommend a minimum of four per sub location located on the main grid support bar within four inches of each of the four corners of the subwoofer.
- 4) Using wire rope or chain, select opposing corners on the subwoofer to connect safety lines, or seismic tethers (Figs. 8 & 9) securely to the structure. These lines should be taut enough to support the majority of the weight of the 110TB, yet leave enough load against the ceiling grid to prevent the grid from buzzing. Be sure all tether points are securely fastened to the subwoofer and anchored securely to the substructure of the building.

Free Space Installation Procedures

- 1) For an installation in free space, select a location that will allow suspension from directly above the subwoofer. Begin by measuring a 19-1/2" square, and at each corner, install a fastener (Fig. 11 & 12) such as the recommended hanger bolt to support each corner of the subwoofer.
- 2) Thread a coupling nut all the way over a hanger bolt, and with a 9/16" socket set, start threading the hanger bolt into the support structure. Secure a hanger to a substructure at all four corners. This may be accomplished several ways depending on your particular installation.

(continued on page 14)

MECHANICAL INSTALLATION 110TB

- 3) Back off the coupling nut completely (Fig. 11) and thread on a backing nut with which to lock threads to the coupler. Hold the coupler up to the hanger bolt to estimate the half way point of the coupler, and set the backing nut to that height before re-installing the coupler and tightening it in place with a socket and an open end wrench. Thread a backing nut onto the threaded rod (or an eyebolt) far enough so the rod can be threaded into the coupler until it stops, having reached the hanger bolt inside. Now tighten up the backing nut on the rod to secure it from turning, until it looks like (Fig. 4). Remember that the rod could otherwise be an eyebolt, if you are using the wire rope suspension method, or a Hilti™ type fastener. Be sure to follow local building codes.
- 4) Always install and utilize all four points, and it should look like (Fig. 13). In this photo, the turnbuckles have been added to the ends of the rods. The closed eyebolt on the turnbuckle has been removed and replaced with the threaded rod. Note that the turnbuckle is stamped with an "L" to identify the load or live end. Observe the correct assembly procedure from rod to eye-hook.
- 5) It's now a fairly simple procedure to place the subwoofer onto the awaiting hooks. Two people, on two separate ladders can now hoist the sub into place. When installed, it can easily be leveled with a few turns on the turnbuckles (Fig. 14).
- 6) If no suitable point exists directly above the desired location, you can use wire rope or chain to make connections that are not perpendicular to the suspension point(s). Under no circumstances should the angles exceed +/- 15 degrees from vertical. Make certain that you follow closely the instructions and regulations for the use of wire rope for overhead suspension. Serious injury could result if guidelines and safety margins are not closely obeyed.



Figure 8: Wire rope detailing suspension or seismic tether



Figure 9: Installed subwoofer top view, only two chains attached



Figure 10: Completed subwoofer installation.



Figure 11: Installing the hanger bolt

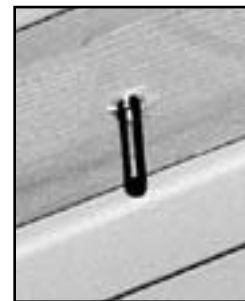


Figure 12: Installed hanger bolt

MECHANICAL INSTALLATION 110TB

- 7) In this photo (Fig. 15) we have removed the threaded rod, and installed eyebolts with backing nuts into the couplers, as described earlier. Detail of the connection with wire rope is shown in (Fig. 8), which is identical top and bottom. Take measurements to approximate the lengths of rope you will need. It might be convenient to make some, or perhaps all of your wire ropes on the ground, and use a quick link (Fig. 7) on each end to connect between both the suspension point and at the subwoofer. Again, it is important to follow local code and regulations for use of wire rope in overhead suspension. Check with your supplier for additional instructions on its use.
- 8) Once two installers have raised the subwoofer to the ropes and the sub is safely suspended, it can be leveled by adjusting the rope lengths. Check for even tension on all ropes, and note that it is much easier to let some wire slip out of the tighter ropes, rather than trying to pull up and tighten the loose ropes. Once the subwoofer is level, the installation is complete.



Figure 13: Suspension points with turnbuckles installed



Figure 14: Levelled subwoofer



Figure 15: Eyebolts in place of threaded rod



Figure 16: Leveling the subwoofer

MECHANICAL INSTALLATION 110SR

NEW / EXISTING CONSTRUCTION INSTALLATION PROCEDURES:

Before You Begin:

Please read and understand all of these instructions thoroughly before beginning any work.

Note that all construction work for the installation of all Tannoy products must be done to local building codes by qualified, licensed installers. A local building inspector should approve any overhead installations. Always use safety goggles when cutting material using a Rotozip™. Tannoy assumes no liability for cause and effect of improper installation work.

Your Package Includes:

- 110 SR subwoofer system
- 11 piece supplied screw package
- Pre-Installation ring (PIR - SOLD SEPARATELY)
- Individually packaged grille

Tools/ Parts Required:

The following is a list of suggested materials and tools. Your needs may differ slightly at each site:

- Rotozip™ cutout tool and Guidepoint™ bit
- 2-1/2" #8 wood screws
- Cordless screw gun
- Combination square and /or tape measure
- Additional 2" x 4" lumber, in 24" pieces
- Trim saw (optional)

Site Preparation and Installation Procedures:

Please note that the 110SR is designed for installation in a ceiling with exposed ceiling joists. The PIR must be secured to the support structure; drywall alone will not support the weight of the subwoofer. Make certain that there is sufficient clearance above the joist (minimum 12") for the subwoofer installation.

Please refer to the photographs as a guideline for installing the PIR into a wood joist or steel stud ceiling.

- 1) (Fig. 1) Measure the locations for two 24" strips of 2" x 2" or 2" x 4" blocking. These must be used in order for secure mounting to the PIR with 2-1/2" #8 wood screws. Use a combination square to measure the thickness of the PIR (approx. 5/8"), and then transfer the measurement to the joist.
- 2) (Fig. 2) Screw the blocking to the joist with several evenly spaced screws. (Fig. 3) Fasten the PIR similarly to the blocking. Note that there are no pre-drilled holes; use the wood screws to go directly through the PIR, keeping a 1" clearance from any "T"-nuts. Note: the PIR must be installed with "T"-nuts on the top side. The PIR is clearly marked for your safety and convenience.

MECHANICAL INSTALLATION 110SR



Figure 1: Installation of blocking for flush mounting of PIR to joists.



Figure 2: Overhead view of PIR, showing blocking attached to joist.



Figure 3: Attaching PIR to blocking.



Figure 4: PIR installed on steel furring channel prior to drywall being placed.

- 3) (Fig. 4) shows the PIR installed against a steel stud furring channel. Attach the PIR with screws directly through the furring and into 24" strips of blocking installed on the upper side of the channel so that the screws will go into both. Ensure that overhead work is carried out safely, and according to local building codes.
- 4) After the PIR installation is complete, run your signal wires. At this time, have an electrician install electrical circuits for your sub, if required.
- 5) Also at this time, we recommend that you install a safety line, typically a light gauge wire rope, from a secure point on the support structure above the subwoofer. Attach this to the strapping on either side of the sub and suspend it in case the installation is compromised. Follow the instructions for wire rope installation from your wire rope supplier, and check with your local building code for specifics.

MECHANICAL INSTALLATION 110SR

- 6) Leave some excess wire hanging through the opening in the PIR so the drywall contractors can cut a locate hole and drop the wires through. You may also want to consult with them on cutting out the opening for the sub as they will likely have the power tools (Fig. 11) necessary to quickly and accurately cut out the opening (Fig. 5).
- 7) If you are inexperienced, but plan on doing this yourself, the job can be made easier by proceeding in two steps.
 - 1) "Hog" out the major inside portion of the material (Fig. 5).
 - 2) Carefully cut out the recess for attaching the subwoofer (Fig. 6).
- 8) A word about the Rotozip™ tool for cutting holes in wallboard: using the correct bit, and accurately setting the cutting depth will greatly reduce any errors caused by the tool "getting away" or cutting into the PIR. Use only a Guidepoint™ bit as pictured (Fig. 11); it will follow the inside perimeter of the PIR. For the first cut, set the depth to the thickness of the wallboard plus 5/8" (the thickness of the PIR). Example: 5/8" PIR plus 5/8" wall board equals 1-1/4" cutting depth.
- 9) After the majority of the material has been removed from the center of the PIR, you can set the cutting depth for the second step. Holding the tool up to the opening, set the depth gauge so that the Guidepoint™ bit will now follow the recessed cutaway in the PIR.



Figure 5: Cutting drywall using the Rotozip™.

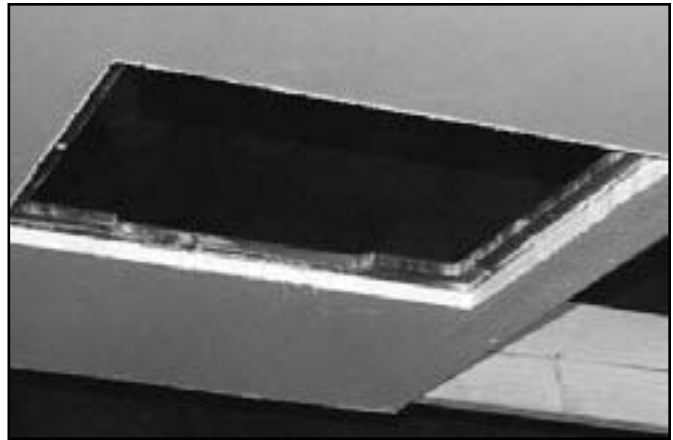


Figure 6: Completed install showing the reveal of PIR relative to the ceiling board.



Figure 7: Installing the subwoofer using the ledge to temporarily secure it.



Figure 8: Attaching the subwoofer to the PIR.

MECHANICAL INSTALLATION 110SR

- 10) After clearing the remaining debris and dust from the opening, it should look like (Fig. 6). Take note of the location and color of the 11 "T"-nuts, and the location and orientation of the cutout in the PIR. The four corner "T"-nuts are gold in color, to differentiate them from the remaining seven which are for securing the 110SR in place.
- 11) You must align the cutout on the 110SR with the same control access cutout (indicated with red paint) on the PIR that will allow you to make adjustments to the system later. Orient the signal cable to the cutout, and prepare to make the AC mains connection before completing the next step.
- 12) Put the subwoofer into place, resting it on an angle (Fig. 7) on the secondary wooden installation "ledge" on the side of the sub; this will assist you in getting a hand free to operate a screw gun (Fig. 8). There are seven 3", Phillips-head, 8-32 black machine screws for securing the 110SR to the PIR.
- 13) The subwoofer is normally installed in place after painting is completed to keep the sub looking new (Fig. 9). Installing the grille (Fig. 10) with the four remaining white 3" Phillips-head 8-32 screws completes the 110 SR installation.



Figure 9: Completed subwoofer detail.

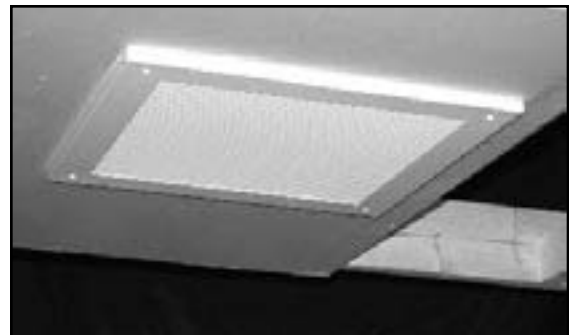


Figure 10: Completed subwoofer installation.



Figure 11: Rotozip™ showing guidepoint bit.

MECHANICAL INSTALLATION 110CS

The 110CS subwoofer is easily installed in almost any indoor location where access to a corner is available. Although its appearance is handsome in full view, the wide dispersion of its down firing woofer and the dispersion of low frequencies in general, allow moderate obstructions such as chairs, plants etc. to be placed directly in front of the cabinet. A corner position against solid walls will heighten the bass performance resulting in a woofer sounding larger and more powerful than its compact size would suggest.

In locations where the situation dictates a higher positioning of the subwoofer, the supplied wall brackets for mounting to 16" center studs may be utilized.

All connections and controls are accessed under the snap-on top panel. Note the hole provided in the cabinet rear through which to run cables.

INSTALLATION OF CORNER RAIL KIT

The 110CS subwoofer is a free standing design. However, with installation of the corner rail kit, mounting at any height is possible. The following instructions will guide you in the installation of the rail kit.

Before You Begin:

Be sure to follow instructions carefully and conform to any and all local codes regarding this type of installation. A qualified, licensed installer should be retained for any behind the wall pre-wiring with final approval of a local building inspector. Tannoy assumes no liability for cause and effect of improper installation work.

Your Package Includes:

- 110CS subwoofer system
- Left side rail, 20" long
- Right side rail, 20" long
- (4) 3/4" wood screws

Tools/ Parts Required:

The following is a list of suggested materials and tools. Your needs may differ slightly.

- Framing level w/rule
- Stud sensor
- Electric drill and drill bits
- Screwdriver bits
- Ladder
- Suitable lag screws*
- Pencil

* NOTE: As wall thickness and materials vary, we do not provide lag screws for the wall mounting of the rails.

Site Preparation and Rail Kit Mounting Instructions:

New construction and most retrofits should include two single "J" Boxes installed in the drywall with power and signal cables within. Position the height of the "J" Boxes so that they will be hidden by the installed subwoofer cabinet and at a vertical placement of no more than 7" from the drywall corner to the outside edge of the "J" Box (see Fig. 4). The gap in the corner behind the installed subwoofer and the drywall will provide adequate clearance for all cable runs to the subwoofer.

MECHANICAL INSTALLATION 110CS

- 1) At your desired location, establish a "bottom" mark in the corner. For a minimum recommended space of 6" between the top of the subwoofer and the ceiling (to access the connector panel), this mark should fall at least 20" from the ceiling. Extend a 20" level, horizontal pencil line on each side of the corner. Do not install the subwoofer too close to the ceiling so as not to allow for connection or adjustment, if required.
- 2) Using a stud sensor, locate the end most studs within the 20" horizontal lines. Mark each and extend a plumb vertical pencil line from these points up the wall for 20".
- 3) Align the right bracket atop the right 20" horizontal line with the flange on the bottom and the 45 degree cut end tight to the corner. Check for level.
- 4) Attach the rail securely to a stud with an appropriate lag screw* through hole "D". Be sure the head of the screw does not protrude more than 3/16". (Figs. 1 & 2)
- 5) Position the left rail with its 45 degree cut end tight to the corner, level and even with the right rail and secure to a stud through hole "D". (Fig. 2)
- 6) There are three holes at the far most end of the rails from the corner; "A", "B" and "C". Hole "B" corresponds to a point 16" from hole "D" and should conform to a standard stud position. Holes "A" and "C" are 3/4" on each side of hole "B" and allow for variances of stud location. Should you encounter a stud location inaccessible by way of any of these holes, you'll need to drill new mounting holes in the brackets corresponding to your vertical pencil lines. (Fig. 2)
- 7) Once you've aligned one of the holes to a stud, check for level and securely fasten the rail to the stud with a suitable lag screw*. Repeat this procedure for the other rail.
- 8) The rails should be level with each other and securely fastened. They must be capable of supporting a 45 lb load.

SUBWOOFER INSTALLATION:

- 1) Remove the top from your 110CS by pulling firmly upward at the outer edges of the lid and set the lid aside.
- 2) Lay the cabinet face (logo side) down on a soft surface and remove the bottom plate and spacers by unscrewing the 4 Allen head pan bolts on the bottom of the sub. Set these parts aside.
- 3) Two people should now lift the sub (with the driver side facing down) and place it atop the two installed rails. Push the unit all the way into the corner and hold in place.
- 4) While one person holds the subwoofer, the second person should drill pilot holes for the 3/4" screws through rail holes "E" and "F" and into the subwoofer cabinet. (Fig. 2)

* NOTE: As wall thickness and materials vary, we do not provide lag screws for the wall mounting of the rails.

(continued on page 14)

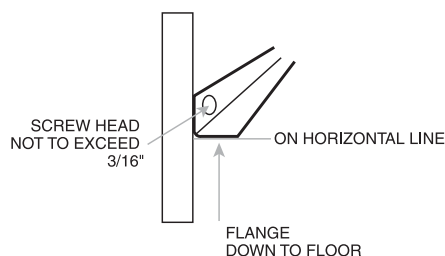


Figure 1

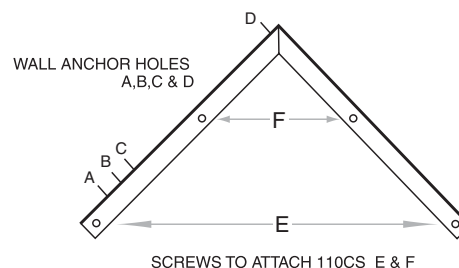


Figure 2

MECHANICAL INSTALLATION 110CS

- 5) Install the 4 supplied 3/4" wood screws being careful not to strip the holes in the subwoofer.
Two additional anchor screws should be installed up near the top rear edge of the subwoofer in the cavity where the control panel is located. The position of these two screws should correspond to the vertical pencil lines drawn earlier.
- 6) Drill a hole in the cabinet at each pencil line, 1" from the top edge of the cabinet and install an appropriate lag screw* through each and into the wall studs.

PLEASE NOTE that there will be a space between the wall and the cabinet.

These two screws should be firm, but do not attempt to over tighten or close the cabinet/wall gap by force of the screw. The screws are for preventing the subwoofer from falling forward and do not support the weight of the unit. (Fig. 3)

- 7) Once the unit is level and secure, reinstall the bottom panel and its spacers with the Allen head bolts removed earlier. Peel off and remove the bottom rubber feet if desired.
- 8) Replace the snap-on lid once all connections and adjustments to the interface panel have been made. (See "Interface Module Options" for details.)

* NOTE: As wall thickness and materials vary, we do not provide lag screws for the wall mounting of the rails.

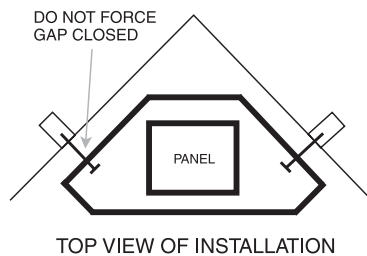


Figure 3

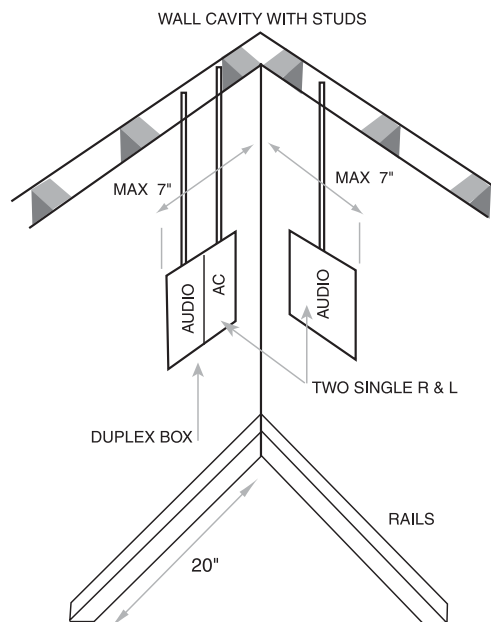
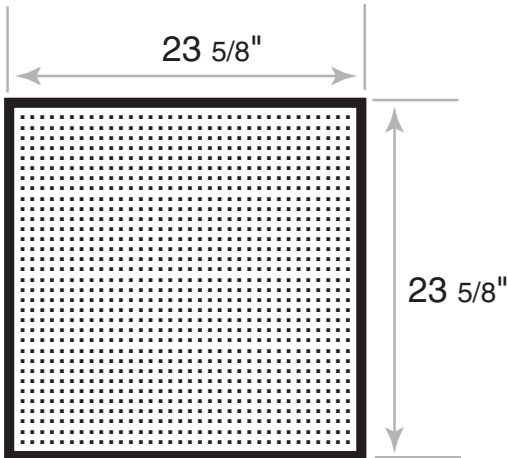


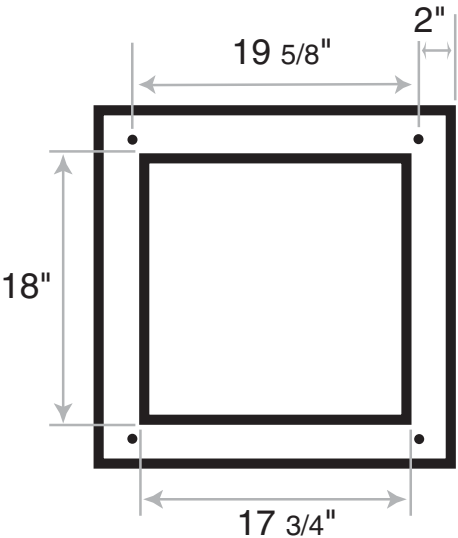
Figure 4

DIMENSIONS 110TB

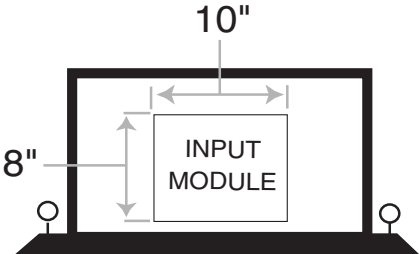
SHIPPING WEIGHT WITH ACTIVE MODULE
40 LBS



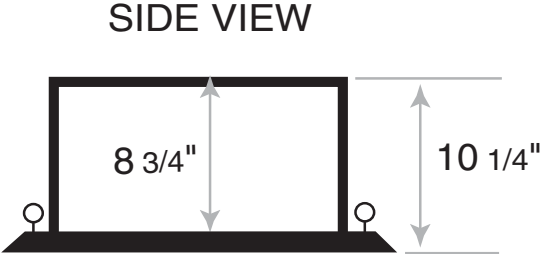
FRONT VIEW



TOP VIEW



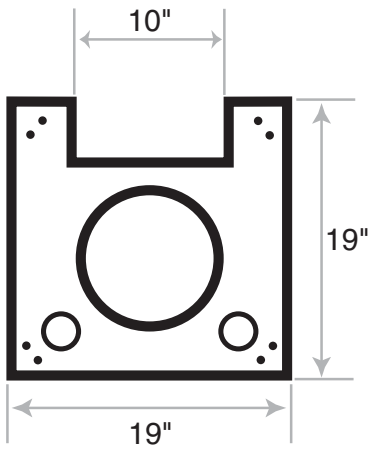
SIDE VIEW



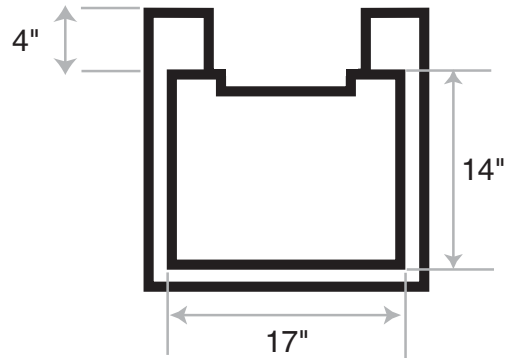
SIDE VIEW

DIMENSIONS 110SR

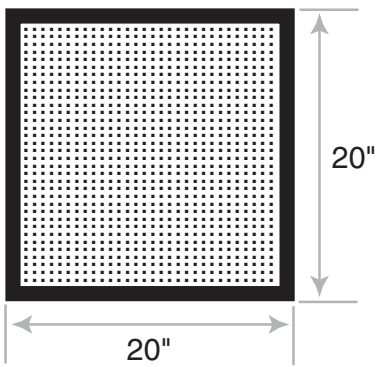
SHIPPING WEIGHT WITH ACTIVE MODULE
37 LBS



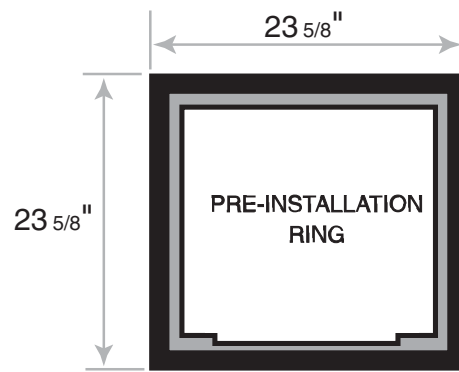
BOTTOM VIEW



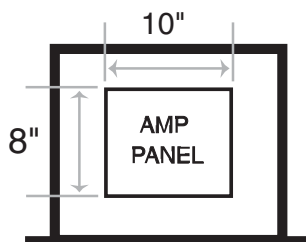
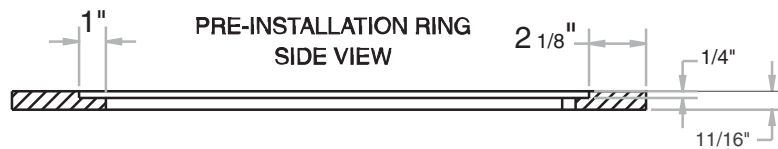
TOP VIEW



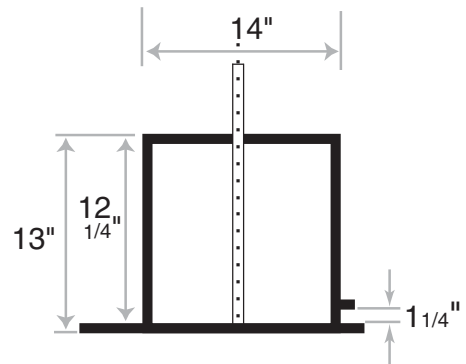
GRILLE



TOP VIEW



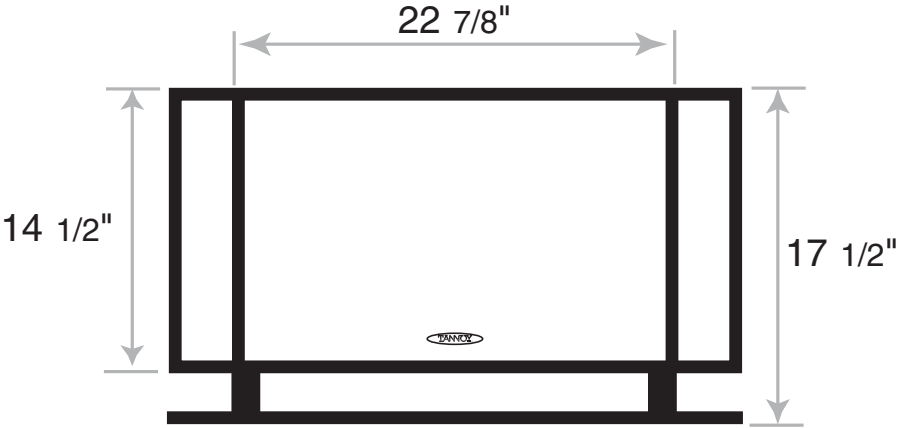
SIDE VIEW



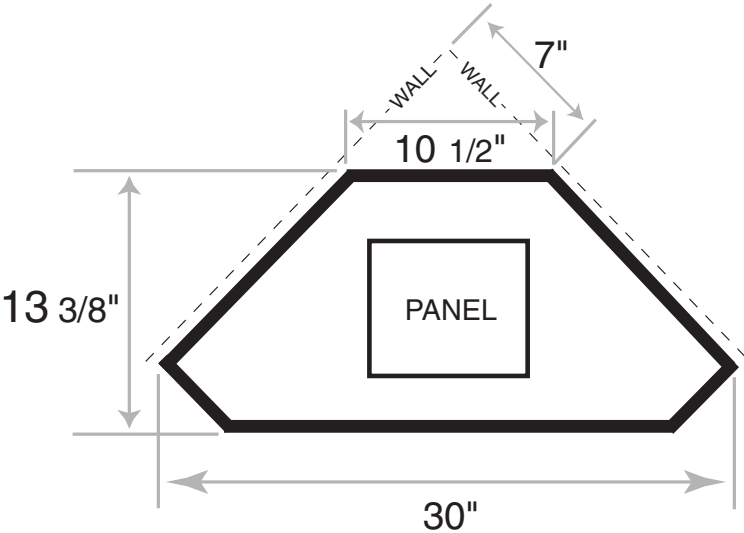
SIDE VIEW

DIMENSIONS 110CS

SHIPPING WEIGHT WITH ACTIVE MODULE
56 LBS



FRONT VIEW



TOP VIEW

TECHNICAL SPECIFICATIONS ACTIVE MODULE

Frequency Response:	-3 dB 31 Hz - 150 Hz (-10 dB @ 21 Hz)
Power Rating:	110 Watts rms
Maximum SPL (2) @ 1 meter:	110 dB (Peak)
Driver Complement:	1 x 10" (254 mm)
LF Cutoff (-3 dB):	31 Hz, 6 th order tuning, vented box
Inputs:	2 x XLR balanced
Outputs:	2 x XLR balanced
Protection Limiter:	Threshold at onset of clipping
Input Level:	Continuously variable input gain control
Low Pass Filter:	Continuously variable 40 Hz - 150 Hz, 24 dB/Octave
All Pass:	31 Hz - 300 Hz +3 dB
High Pass Filter:	Fixed at 80 Hz, 12 dB / Octave
High Pass output:	L/R, unity gain XLR balanced
High Pass output Bandwidth:	80 Hz - 150 kHz -3 dB
Amplifier type:	Mosfet outputs
AC Power Requirement:	110/120 VAC 50/60 Hz or 220/240 VAC 50/60 Hz
Power Consumption:	16 Watts at idle 150 Watts at rated power
Power Indicator:	Front mounted green LED in active mode, "when signal is present or on initial power up". Green LED turns to red if signal is not present for more than two minutes indicating stand-by mode. The sub turns "auto on" when signal is re-introduced.

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